XYZ SPACEFRAME VEHICLES enables persons to build their own vehicles for transporting persons or goods. XYZ SPACEFRAME VEHICLES is based on a low cost, light weight, highly durable construction requiring only simple hand-held, non-specialized tools to produce. With XYZ SPACEFRAME VEHICLES, N55 offers a new alternative to mass produced traditional cycle products, often made from low grade materials and not made to last or being repaired.

The designs of XYZ SPACEFRAME VEHICLES including any new construction principle used in the system and the XYZ construction and connection principle are Open Source provided under Creative Commons CC BY-NC-SA 3.0 (Noncommercial — You may not use this work for commercial purposes. Any use of the works must include proper credits to N55 and collaborator Till Wolfer and a link to www.n55.dk).

Available construction plans can be downloaded at www.n55.dk. You can also purchase one of our XYZ CARGO models at www.xyzcargo.com and support the further development of XYZ SPACEFRAME VEHICLES. To test ride a XYZ CARGO or to talk to us, please drop by at our spaces in Kopenhagen (DK) or Gaengeviertel/Hamburg (GER). XYZ SPACEFRAME VEHICLES are developed by N55 in collaboration with Till Wolfer.
Frame component FR_1a
x2
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Frame component FR_1b
x2
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes
Frame component FR_2a  
x4  
25mm square aluminium tubing  
2mm material thickness  
6.5mm Ø holes

Frame component FR_2b  
x2  
25mm square aluminium tubing  
2mm material thickness  
6.5mm Ø holes

Frame component FR_2c  
x4  
25mm square aluminium tubing  
2mm material thickness  
6.5mm Ø holes
Frame component FR_3a
x4
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Frame component FR_3b
x1
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Frame component FR_4a
x2
3mm aluminium plate
rear wheel cradle
6.5mm Ø holes
12.50 Ø rear wheel hub screw

Frame component FR_4b
x2
Frame component FR_4c
x2 (mounted on the outside of FR_4b)
3x60mm aluminium plate
6.5mm Ø holes

NOTE: The diameter of the big center hole has to equal exactly the size of the outer diameter of the bottom bracket’s end caps:
Steering bridge component ST_1a
x1
25mm square aluminium tubing
2mm material thickness
6.5mm and two 8mm Ø holes

Steering bridge component ST_1b
x1
25mm square aluminium tubing
2mm material thickness
6.5mm and two 8mm Ø holes

Steering bridge component ST_2
x2
30mm square aluminium tubing
3mm material thickness
6.5mm, 8mm and 12mm Ø hole
Steering bridge component ST_3
x4
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Steering bridge component ST_4
x1
25mm square aluminium tubing
2mm material thickness
6.5mm and 8mm Ø holes

Steering bridge component ST_5
x2
3x30x30mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Steering bridge component ST_6
x2
20mm diameter round aluminium tubing
2mm material thickness
6.5mm Ø holes
Frame component ST_6
x2
50mm diameter nylon sphere w. thread

Steering bridge component ST_7
x4
c. 23.50 mm Ø plastic washer (M8-hole), 5mm thickness
or Axial needle bearings with M8-hole

Self-greasing plastic washers ST_7
at top and bottom of ST_4

Self-greasing plastic washers ST_7
at top and bottom of ST_4

Axial needle bearings
or self-greasing plastic washers
at top and bottom of ST_2

Axial needle bearings
or self-greasing plastic washers
at top and bottom of ST_2
Seat component SE_1
x1
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Seat component SE_2
x1
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes
SEAT COMPONENTS

Seat component SE_3
x2
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Seat component SE_4
x1
25mm square aluminium tubing
2mm material thickness
6.5mm Ø holes

Seat component SE_5
x1
3mm polycarbonate plate
340.00 x 880.00 mm

Seat component SE_6
x2
25mm nylon ribbon black
total length ca. 820mm
BACK WHEEL 26"x1.75
prefarably:
Shimano Nexus 8 gear internal hub with GripShift, including rollerbrake system and brake lever,
wheel: reinforced spokes 2.34mm, double wall rim and punctureproof tires
Fixes via: Frame component FR_4a

FRONT WHEELS 24"x1.75
equipped with a reinforced axle (M12, 8.8) for one-sided attachment, prefarably: mirrored drum brakes or disc brakes and a double break lever for synchronous braking of both front wheels
Fixes via: Steering bridge component ST_2

CHAIN approx. 3250mm
CRANKSET - 33T

CHAIN TENSIONER & PULLEY
attachment method depends on the model of the chain tensioner or derailleur
Fixes via: Frame component FR_2c

BOTTOM BRACKET
length min. 127.5mm
casing: full steel (no aluminum or plastics)
Fixes via: Frame component FR_4b

MISCELLANEOUS:
- Brake cables, socks and cable caps: length depending on realized layout
- Gear cables, socks and cable caps: length depending on realized layout
- FlexiPipe: 2 pieces (optional)
- 1x 26" and 2x 24" bicycle tube
- M12 x 160mm axles, strength min. 8.8: 2 pieces, incl. selfsecuring nuts and 4x M12 washers
- Bike light front & rear
BILL OF MATERIALS:

BOLTS & NUTS
M6 SELFLOCKING NUTS, stainless (DIN985) - ca. 150 pieces (TWOSEATER: 200 pieces)
M8 SELFLOCKING NUTS, stainless (DIN985) - ca. 5 pieces (TWOSEATER: identical)
M8 NUTS NORMAL, stainless - ca. 5 pieces (TWOSEATER: identical)
M6 and M8 BOLTS with Hexagon head, stainless, (DIN931):
  6mm x 140 mm - ca. 2 pieces (TWOSEATER: 3 pieces)
  6mm x 90 mm - ca. 15 pieces (TWOSEATER: 20 pieces)
  6mm x 90 mm - ca. 5 pieces in DIN 933 (full thread) (TWOSEATER: identical)
  6mm x 60 mm - ca. 60 pieces (TWOSEATER: 120 pieces)
  6mm x 65 mm - ca. 10 pieces (TWOSEATER: identical)
  6mm x 40 mm - ca. 25 pieces (TWOSEATER: identical)
  8mm x 120mm, 2 pieces (TWOSEATER: identical)
  8mm x 100mm, 2 pieces (TWOSEATER: identical)
M6 WASHERS - ca. 300 pieces (TWOSEATER: 400 pieces)
M8 WASHERS - ca. 10 pieces (TWOSEATER: identical)

ALUMINUM
2x25x25mm ALUMINIUM SQUARE TUBE: 15m (TWOSEATER: 34m)
3x30x30mm ALUMINIUM SQUARE TUBE: 1m (TWOSEATER: 2.5m)
4x60mm ALUMINIUM FLAT: 1m (TWOSEATER: identical)
2x22mm ALUMINUM ROUND TUBE Ø 22mm: 1m

PLASTICS
3x880x340mm POLYCARBONATE SHEET (TWOSEATER: 2 times)
ENDCAPS (PE), black, for 2x25x25 tubing: ca. 70 pieces (TWOSEATER: 100 pieces)
ENDCAPS (PE), black, for 3x30x30 tubing: ca. 10 pieces (TWOSEATER: 15 pieces)
POM or PE black, round Ø 25mm: ca.0,3m (TWOSEATER: 0,5m)
POM or PE black, square 21x21mm: ca. 0,6m (TWOSEATER: 0,5m)
POM or PE WASHERS M8: ca. 20 pieces (TWOSEATER: identical)

MISCELLANEOUS
AXIAL NEEDLE BEARINGS M8: 4 pieces (TWOSEATER: identical)
NYLON SPHERE w. screwthread, black, diameter 50mm: 2 pieces (TWOSEATER: identical)
NYLON RIBBON, black, width 25mm, for seat side support: 1.7m (TWOSEATER: 3.5m)

All amounts include some spare pieces.
Nonetheless: please consider ordering extra amounts.
Mistakes during production of parts as well as
new developments will need more bolts & tubing.
N55 art etc.

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